

[0113] Multiple Windows

[0114] In accordance with the present invention, each of the window frame styles and variations thereof as described above may be applied to the display and control thereof of multiple windows, referred to herein for convenience as Multi-Window. Different manners of such display and control may be applied as described below.

[0115] Multi-Window Style A—Independent Windows

[0116] Multi-Window Style A, in accordance with the present invention, displays and controls each window in manners that are independent from the display and control of other windows and provides for assigning priority to any one of multiple overlapping windows. FIGS. 12A and 12B show windows W1 and W2 displayed simultaneously, each window providing separate and distinct images I1 and I2, and each window allowing for separate control by any of the window frame styles described herein. For example, FIGS. 12A and 12B illustrate how the width and/or height of windows W1 and W2 may each be independently controlled using three points of contact under window frame style 1. Specifically, FIG. 12A shows the horizontal width of window W1 being increased using three points of contact by moving finger f11 towards window W2. Similarly, FIG. 12A shows the horizontal width of window W2 also being increased, independent of window W1, by moving finger f21 towards window W1. While FIG. 12A specifically shows both windows being controlled using three points contact, any window frame method discussed herein may have been employed. FIG. 12B shows Windows W1 and W2 in their enlarged states. In this frame style, since each window may display a different image (including text), one window generally is given visual priority, with any overlapping portion of the other window being visually blocked. Changing window priority may be achieved in any known manner.

[0117] Multi-Window Style B—Common Display Windows

[0118] Multi-Window Style B, in accordance with the present invention, controls each window providing an image in manners that are independent from the control of other windows that provide that same image. FIGS. 13A-13C show windows W1 and W2 displayed simultaneously, with each window showing a separate view (or portion) of the same image I1. Frames b1 and b2 of Windows W1 and W2, respectively, may be controlled separately as previously discussed. For example, the width and/or height of a window may be controlled using window frame style 1 previously discussed. As shown in FIG. 13B, the windows are resized and/or moved so that they overlap with one another, with section O1 shown in FIG. 13B representing the overlapping portion of the two windows. Since the two windows display portions of the same image I1, window visibility priority need not be established.

[0119] Overlapping section O1 includes borders as shown in FIG. 13B. However, the borders of section O1 may be modified from that shown and, for example, may be made thinner, hashed, lighter in color, different in color, or different in another manner from the other border sections of Windows W1 and W2. In one variation, the borders of section O1 may be removed altogether, thereby providing an unobstructed view of the overlapping section as shown in FIG. 13C. Moreover, while the various views show rectangular shaped windows, with at least FIG. 13B showing a rectangular shaped overlapping section, the shape and size of each window, as well as overlapping sections thereof, may have different shapes, including round, oval, octagonal, heart-shaped, etc.

[0120] Multi-Window Style C—Lens Windows

[0121] Multi-Window Style C, in accordance with the present invention, includes multiple windows that operate to display images in different manners. FIG. 14A shows two non-overlapping windows that may operate in manners previously described. When the windows overlap, such as shown in FIG. 14B, the image within the overlapping portion O1 is displayed in a manner that differs from the way the image is displayed in the non-overlapping window portions.

[0122] In the embodiment of Multi-Window Style C, the overlapping portion O1 operates as a sort of lens that displays a characteristic (or enhancement) of that portion of the image within overlapping portion O1 that is not visually provided elsewhere within the windows (i.e., within the non-overlapping portions). As one example, when the displayed image is a map such as shown in the figures, the image is displayed at a greater resolution within overlapping portion O1 than is displayed in non-overlapping portions of each window. In FIG. 14B, the image within portion O1 is shown lightened, as compared to other displayed portions of the map to illustrate such a different characteristic or enhancement. As a further example, the characteristic displayed within overlapping portion O1 is real time traffic data wherein the image that is displayed is a map that include street and other information useful to a traveler. As yet another example, the characteristic displayed may be a preview of the outcome of image processing, such as red eye reduction, monochrome conversion, or magnification. As yet a further example, in the case the information displayed within the windows is a computer-type file that includes embedded or hidden data (e.g., meta-data), such information may be made available for viewing and/or amending within the overlapping portion O1. Since the size and/or shape of the lens, that is, the overlapping portion O1 is user modifiable, the amount of additional or different information that is made available within the “lens” may be made as large or small as needed or desired.

[0123] FIG. 14C shows yet a further variation of Multi-Window Style C, wherein section L1 is defined by the overlapping window portions. In this variation, each of at least two windows displays a respective portion of the same image in a different manner. In particular, window W1 in FIG. 14C displays a first characteristic of a portion of an image such as, for example, the temperature of the various regions displayed within window W1. Window W2, at the same time, displays a second characteristic of the image such as, for example, the relative altitude of the displayed image. In accordance with this variation, the overlapping portion L1 displays yet a third characteristic of that portion of the displayed image such as, for example, an amount of rain-fall via a color-coded key. In a variation, the overlapping portion L1 displays both the first and second characteristics of the image.

[0124] Multi-Window Style D—Lens Windows II

[0125] Multi-Window Style D, in accordance with the present invention, includes multiple windows that display the same image, similar to styles B and C, but where the windows have layering, such as shown in style A. More specifically, and with reference to FIG. 15A, window W1 displays an image while window W2, which has visibility priority over window W1, operates as the lens that displays a characteristic or enhancement of the displayed image that is otherwise not provided within window W1. The characteristic or enhancement shown within window W2 may be an image processed version of the image that is displayed in window W1, or other characteristic/enhancement mentioned herein, or any charac-